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2-4-2016

Knowledge and tasks connecting elementary, secondary, and disciplinary mathematics

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Lai, Yvonne, "Knowledge and tasks connecting elementary, secondary, and disciplinary mathematics" (2016). *DBER Speaker Series*. 87.
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Abstract for DBER Group Discussion on 2016-02-04

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Title

Knowledge and tasks connecting elementary, secondary, and disciplinary mathematics

Abstract

A well-prepared teacher should be able to help her students see mathematics as ideas that develop over time. Mathematics courses designed specifically for prospective secondary teachers aim for prospective teachers to see and find connections across elementary, secondary, and disciplinary mathematics, and beyond that to be able to use those connections in their future teaching. While there is broad agreement with these aims, there is also little consensus around how to carry them out. Two challenges in meeting these aims are identifying content that lends itself to such connections and designing tasks that can be used to engage with that content. In this talk, I will propose a few examples of content and tasks, and discuss what may make them useful. I will then invite the audience to contribute ways they have used their teaching to meet the challenge of identifying content and designing tasks for the purpose of connecting elementary, secondary, and disciplinary mathematics.